New claims:

1. A transgenic non-human animal of whose germ and/or somatic cells comprise a DNA construct which contains a coding region which leads to the expression of an N- and C-terminally truncated tau molecule, wherein
- the molecule is truncated at least 30 nucleotides downstream of the start codon and truncated at least the 30 nucleotides upstream of the stop codon of the full length tau cDNA sequence coding for 4-repeat and 3-repeat tau protein, respectively, as given in Seq.accession number NM_173727 in Gene-Bank
- the minimally truncated tau core encompasses a protein fragment which is encoded by nucleotides nr 744 - 930 (seq ID No. 9; numbered according to tau protein isoform 43)
- said DNA construct is coding for a protein, which has neurofibrillary (NF) pathology producing activity when expressed in brain cells of said animal.

2. Non-human animal whose germ and somatic cells transiently or stably express said DNA construct as defined in claim 1, thereby exhibiting NF pathology in the brain.

3. A transgenic non-human animal according to claim 1 or 2, wherein the protein encoded by said DNA molecules is expressed in the brain.

4. A transgenic non-human animal according to anyone of claims 1 to 3, wherein said animal is a rat.

5. Methods for genotyping of transgenic animals of any one of claims 1 to 4 using oligonucleotides specific for transgenic truncated tau according to claim 1.

6. A transgenic animal according to any one of claims 1 to 4, developing NF pathology, and having a genetic background allowing the induction of risk factors associated with AD, thereby representing a disease model for humans.

7. A transgenic non-human animal of claim 6, which represents an animal model of AD, and permits induction of hypertension as a

risk factor of AD.

8. A transgenic non-human animal of claim 6, which represents an animal model of AD, and permits induction of diabetes as a risk factor of AD.

9. A transgenic non-human animal of claim 6, which represents an animal model of AD, and permits induction of hypercholesterolemia as a risk factor of AD.

10. A screening assay system and validation system for substances for the treatment, prevention and diagnosis of Alzheimer's disease which comprises:
- evaluation of substances by:
  - detecting changes of neurofibrillar pathology in an animal according to any one of claims 1 to 4 and 6 to 9,
  - measuring of neurobehavioural changes in said animal,
  - measuring of the cognitive score in said animal,
- a validation system for substances for the treatment and prevention of tauopathies preferably AD,
- a validation system for the development of diagnostic markers and probes for the detection tauopathies preferably AD,
- a validation system for substances for the treatment of hypertension, diabetes, dislipidaemia and hypercholesterolemia in combination with tauopathies, preferably AD.

11. An experimental model system according to claim 10 for identifying new drug targets in tauopathies and related neurodegeneration processes preferably AD.

12. Use of the animal according to any of claims 1 - 4 and 6 - 9 as an in-vivo assay to test the efficacy of substances, or therapies, in particular neurofibrillary pathology reducing therapies.

13. The use according to claim 12 wherein said substances or therapies are for neurodegenerative diseases, in particular tauopathies, preferably AD and other neurodegenerative diseases accompanied by neurofibrillary pathology.

14. A cell line transformed with a construct according to claim 1 or being derived from a transgenic animal of any one of claims 1 to 4 and 6 to 9.

15. A cell line according to claim 14, characterised in that the cell line is a rat cell line derived from a transgenic rat embryo.

16. An in vitro assay comprising a cell line according to claim 14 or 15, where said assay is employed as a screening and validation tool for the discovery of therapeutic preventive and diagnostic compounds and markers for Alzheimer's disease.